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ABSTRACT

Deci and Ryan's (1975, 1980) cognitive evaluation theory viewed intrinsic motivation as a function of perceived competence and personal causation. Deci and Ryan also proposed that people tend to perceive competitive situations as controlling. Gender differences were used by Deci and Olson (1989) to explain the findings by Ryan and Deci (1986) that males evidenced more intrinsic motivation following losing and females evidenced more intrinsic motivation following winning. This study replicated the Ryan and Deci (1986) study in a noninteractive competitive situation. If results are consistent with Deci and Olson's (1989) interpretation, then persistence at the task should be highest for females who won and males who lost and reported interest in the task should be higher for females than for males regardless of competition outcome. Subjects were 20 male and 20 female college students who completed a puzzle-solving task in which the outcome was manipulated. Both males and females interpreted the situation as being competitive with no significant differences related to gender. Both genders reported feeling competent after winning and incompetent after losing. Males who lost and females who won persisted at the task significantly longer than did males who won and females who lost. Males, however, reported that the task was more interesting than did females in both the win and lose conditions. (NB)

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Intrinsic Motivation, Perceived Competence, and Gender in a Controlling Situation

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Paper presented at the meetings of the
Southwestern Psychological Association, May, 1990, Dallas

RUNNING HEAD: Intrinsic Motivation, Competence, and Gender

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Abstract

Twenty male and 20 female subjects competed in a puzzle solving task in which the outcome (win or lose) was manipulated. Winning was perceived as competence feedback. Intrinsic motivation was shown to interact with Gender and Outcome, but was unrelated to perceived competence. Implications are discussed.

Intrinsic Motivation, Perceived Competence, and Gender in a Controlling Situation

Deci and Ryan's (1975, 1980) cognitive evaluation theory attempted to explain intrinsic motivation as a function of perceived competence and personal causation. The theory suggests that any event which increases one's perceived competence and/or autonomy will increase intrinsic motivation. Conversely, any event which is perceived as being controlling (such as deadlines, extrinsic rewards, or social pressure) will reduce intrinsic motivation.

Deci and Ryan (1975, 1985) also proposed that people have a tendency to perceive competitive situations as controlling especially if they are instructed to compete. If competitive situations are controlling, it follows that intrinsic motivation for a task will decrease following a competition. Deci and Olson (1989) noted that noninteractive competitive situations, those which only involve offense, are more likely to be perceived as controlling than are interactive competitive situations, where there is a critical defensive as well as an offensive.

Research on intrinsic motivation following competitive situations has reported mixed results (e.g., Ryan and Deci, 1986; Reeve, Olson and Cole, 1985). If we define intrinsic motivation to be equal to persistence at a task in the absence of rewards, Reeve, et. al. reported that winners in

a competitive situation tend to evidence higher intrinsic motivation than losers. Ryan and Deci (1986) on the other hand reported that males evidenced more intrinsic motivation following losing, and females evidenced more intrinsic motivation following winning.

Deci and Olson (1989) proposed two possible interpretations of the inconsistent results. First, they proposed that males could have perceived the interactive competitive situation as controlling, would be extrinsically motivated and would persist at the task until they received the extrinsic reward. Thus they would persist when they lost and not persist when they won. Females, on the other hand, would perceive the situation as informational, would be intrinsically motivated, and would evidence behavior consistent with the cognitive evaluation theory (Deci and Ryan, 1975,1985). They would persist when receiving competence feedback, i.e., when they won, and they would not persist when they received incompetence feedback, or, when they lost.

The second interpretation was that both males and females are ego involved in competitive situations but that they react differently to the competition. The present study was designed to test the first interpretation.

To minimize the ego involvement and maximize the probability that the situation would be perceived as controlling,

the present study replicated the Ryan and Deci (1986) study in a noninteractive competitive situation, that is, a competitive situation which involves no defense.

A direct measure of persistence at the task in the absence of external rewards was used as the behavioral measure of intrinsic motivation. In addition, a self report measure of interest in the puzzle was also obtained, since interest has been shown to be directly related to intrinsic motivation (Reeve, 1989). If Deci and Olson (1989) are correct, females should show less interest because they are intrinsically motivated with the task, and males should show less interest than females because they are extrinsically motivated. Figures 1 and 2 report expected results.

Insert Figures 1 & 2 about here

If the results of both of these measures are consistent with Deci and Olson's interpretation as stated above, then:

(1) persistence at the task should be highest for females who won and males who lost, and

(2) reported interest in the task should be highest for females males than for males regardless of competition outcome.

Method

Subjects. The subjects were 20 male and 20 female introductory psychology students at Texas Christian University who received extra credit for participating.

Materials. The task used in the study was a three dimensional, eight cubed puzzle assembly which can be rotated by its hinges into more complex shapes. Ink drawings and wooden models of the required complex shapes were also given to the subjects.

Procedure. Twenty male and 20 female subjects were randomly assigned to either a "competitive win" or "competitive lose" condition with 10 subjects being in each of the four conditions. In all conditions the subject and a same sex confederate were seated, facing each other, at a table with two sets of identical puzzles and ink drawings of the required shapes.

All subjects were instructed to try and manipulate their puzzle into the required shape faster than the confederate. There were two three minute practice trials and three five minute competitive trials. The confederate always solved the first practice trial faster than the subject, and always failed to solve the second practice trial. For the "competitive win" condition, the confederate failed to solve the puzzle on any competitive trial. For

the "competitive lose" condition, the confederate solved the puzzle first (in 20 - 30 seconds) on all of the competitive trials.

Following the final competitive trial, the experimenter requested a private interview with each subject, told the confederate to move to another room for the interview, and told the subject that he/she would be interviewed in approximately five to ten minutes. The subject was the left alone with the puzzle assembly, two male and two female oriented magazines, any books the subject had brought into the room, and a TCU newspaper. The subject was videotaped for eight minutes, and the data were the number of seconds the subjects played with the puzzle. Following the eight minutes, the experimenter returned and requested the subject to complete a post session questionnaire of 26 Likert scale items assessing how competitive, enjoyable, and interesting the subject found the task to be.

Results

Both males and females interpreted the situation as being competitive with no significant differences related to gender. Also, both males and females reported feeling competent after winning and incompetent after losing (See Figure 2, $F=13.11$, $df=1,36$, $p<.05$).

Insert Figures 3 & 4 about here

With regard to the measures of intrinsic motivation, males who lost and females who won persisted at the task significantly more than males who won and females who lost ($F=7.37$, $df=1,36$. $p<.05$). Males, however, reported that the task was more interesting than did females in both the win and lose conditions ($F=8.96$, $df=1,36$, $p<.05$).

The interest data coincide with the free play data in the lose condition with the males displaying more persistence and interest in the task than did females. The interest measure, however, produced conflicting results. Although males reported the task as being more interesting, they spent significantly less time playing with the puzzles than did the female winners during the free choice period.

Conclusion

Ryan and Deci's (1986) contention that Reeve, Olson, and Cole's (1985) noninteractive competition would yield different results from studies using interactive activities was not supported. The present study replicated Deci and Ryan's (1986) persistence data for males and females in an interactive competitive situation. The reported interest in the task, however, was inconsistent with the Deci and

Olson (1989) interpretation. In fact, the interest data indicates that the males were more intrinsically motivated in the task than the females. Thus they should have been less ego involved and should have persisted at the task following winning and should have been disinclined to persist following losing. The females, on the other hand, indicated less intrinsic motivation, should have been more ego involved and should have persisted following losing and been disinclined to persist following winning. The data from the present study clearly reject Deci and Olson's (1989) first interpretation of the inconsistent intrinsic motivation results reported in competitive situations.

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Fig. 1: Mean Free Choice Time by Outcome and Gender (PREDICTED)

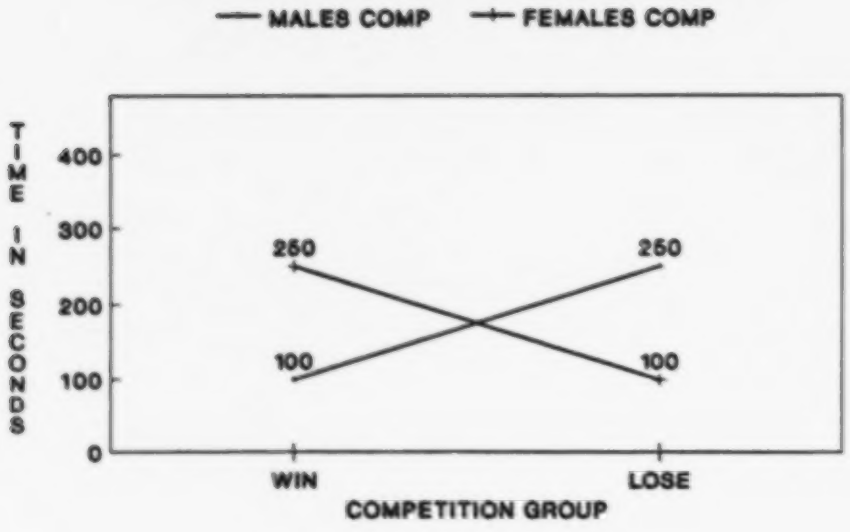
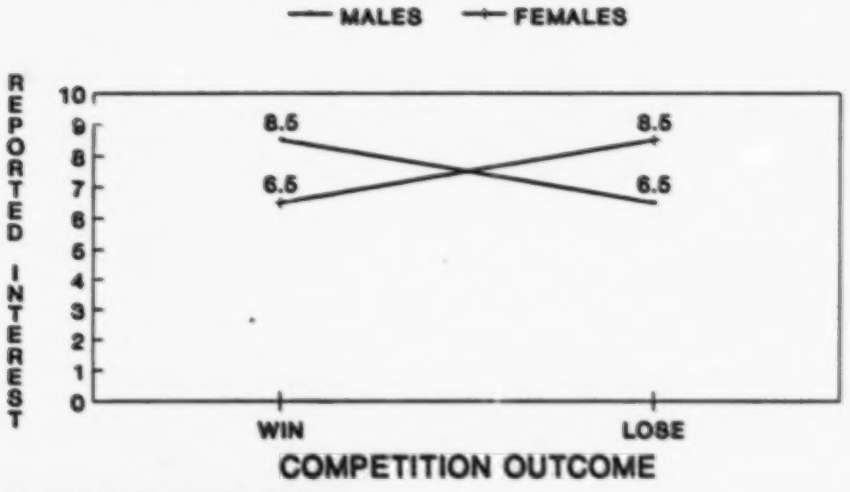


Fig. 2: Reported Interest in the Task by Outcome and Gender (PREDICTED)



NOTE: Figs. 1 & 2 are presented to show the expected interaction. The numbers were chosen to approximate the data.

Fig. 3: Mean Free Choice Time by Outcome and Gender

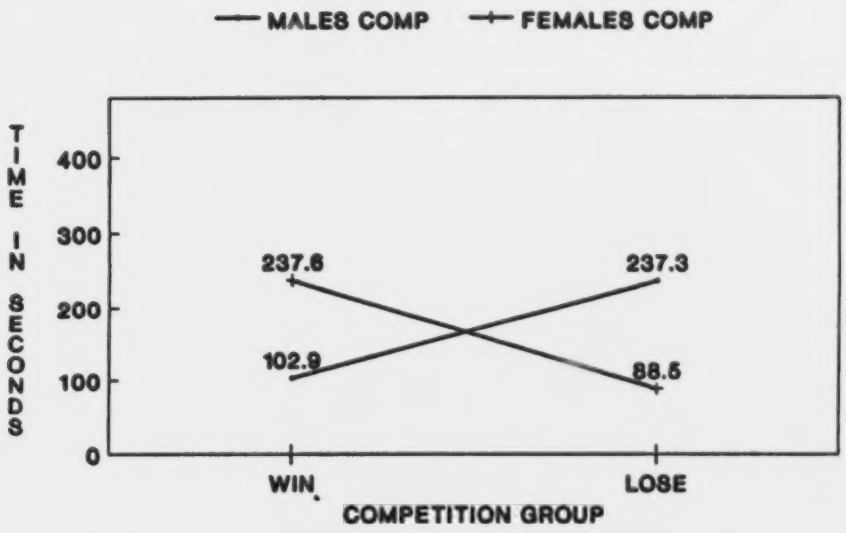


Fig. 4: Reported Interest in the Task by Outcome and Gender